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**Correlates of Socioeconomic Status and the Health of Older People in the United Kingdom:
A Review**

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Abstract

This paper reviews the existing literature on the association between the socio-economic status (SES) and the health of the ageing population in the United Kingdom (UK). It has been noted that socio-economic differentials are more marked across the UK than they are in other developed countries. Social class gradients are significant in health for working age people (up to age 65), whereas studies on older populations have so far been limited so as to draw any robust conclusions. In this paper, we examine the inequalities through selected SES indicators in order to tease out the effects on health outcomes of the older population. We critically review the physical and mental health indicators of older people in the UK with regard to their SES differentials. The findings reveal that older people with lower SES are more likely to experience poorer health outcomes (for example, long-standing illness or increased disability) and have shorter life expectancy compared to those of higher SES. We illustrate how education remains the single most important determinant of health inequality in later life. We suggest that educational level or occupational class allied with material deprivation offer the best combined indicators of SES for studying health inequalities among older people. The findings of this paper has profound implications for prioritising policies to improve the health and wellbeing of elderly people with lower SES and go offer an evidence base of how to understand and to develop interventions that minimise the inequalities in health in later life in the UK.

Keywords: Socio-economic status (SES), illness, health indicators, older people, care, United Kingdom

INTRODUCTION

Socio-economic inequalities in health and mortality are well documented in many developed countries (Exworthy *et al.*, 2003; Jone and Nicolas, 2004; Marmot, 2005; Wilkinson and Pickett, 2006; PRB, 2008; Mackenbach *et al.*, 2008; Blackman *et al.*, 2012; Scottish Parliament, 2015; Baker *et al.*, 2015) leading to the elaboration and discussion of arrange of conceptual and measurement issues from a range of different disciplines (Jones and Higgs, 2013). A number of studies in developing countries have consistently demonstrated that individuals with lower socio-economic status (SES) are more likely to have poorer health compared to those with higher SES (Grundy and Glazer, 2000; Aratzciz and Rueda, 2007). However, studies on the issue of socio-economic inequalities in health tend to focus on people of working age, giving less attention to such differentials among the growing numbers of older people (aged 65 years and over). Secondly, these causal relationships are more complex than would be expected. Rapid population ageing in developed countries requires a more nuanced understanding of the health trajectories of older people. Thinking more creatively about the processes of illness, loss and the quality of experiences in later life should recognise that discourses being constructed about what constitutes ‘successful’ and ‘unsuccessful’ ageing may have their roots in historically past and cumulative social processes and inequalities which are not yet being grappled with (Jones and Higgs, 2013). Higher mortality and morbidity rates within this age group (Bowling, 2004) have also been related to the persistence of health inequalities across the lifecourse (Marmot, 2010). Developed countries such as Germany and Japan have provided some interesting examples arising from social and political upheavals in the

twentieth century which have bearing on whether the underlying causes of the malleability in human aging are due more to improvements in early life or to improvements in the living conditions experienced in later life (Kirkwood, 2014). Despite the UK having among the biggest reductions in mortality, the UK 'older adult' rates are sixth highest among Western countries so there are no grounds for complacency (Pritchard and Wallace, 2011). The risk of poverty among older people in the UK is three to four times higher than the typical risk of poverty in Europe and in terms of quality of life, a strong association has been demonstrated between SES and aspects of 'health' such as life satisfaction, psychological wellbeing, social exclusion and the ability to adapt to challenges in later life (Burholt and Windle, 2006).

Moreover, the findings from studies of the association between SES and inequalities in the health of older people are less consistent when compared to that of working age people (McMunn *et al.*, 2009). These variations in the findings may be partly due to the use of different indicators and the measures used to define socio-economic positions as well as competing hypotheses such as those on cumulative disadvantage (Dannefer, 2003) and from 'divergence/convergence' theories (Beckett, 2000) where age becomes a levelling factor. As the relevance of the determinants of SES may vary over the life course, measuring the SES of older people poses particular challenges. Firstly in the post-working population, there are technical questions about the utility of occupational class and other indicators of socio-economic position to study health statuses (Rees Jones and Higgs, 2013). Secondly, incorporating indicators of class, status, wealth, income, and deprivation with how these interact with other important factors in later life such as retirement status, gender, ethnicity to assess their impact on health status within a relatively lengthy post-working life has not been fully addressed within current studies. Thus, it is of particular interest to identify which SES indicators are the most significant for measuring the health inequalities of older people in the UK and how to use these analyses to inform policy and related interventions to promote successful ageing and to think about how resources are directed towards these. More research is needed to explore the extent of socio-economic inequalities in particular user groups within ageing for example, those with high support needs accessing health and social care. Further consideration is also needed to determine whether inequalities that favour old people from lower SES can be justified on the grounds of fairness (Equality and Human Rights Commission, 2009).

Within the above context, this paper specifically examines the relationship between SES and health outcomes among the ageing population in the UK. Through a critical and reflective review of key relevant publications in this field, we discuss some of the ways in which SES, health and their causal connection have been traditionally defined and utilised. We then provide an examination of the correlates of different but specific SES indicators that can help us interrogate more effectively the impact of these on the health of older people and to focus on in order to alleviate the impact of SES on health and wellbeing in later life. We conclude with a review of the challenges, limitations and future research agendas and highlight some of the policy and practice implications of our findings.

DEFINING SES, HEALTH, AND THEIR CASUAL CONNECTION

SES is a term used to refer to the social standing or position of an individual or group and which is commonly conceptualised through the lens of social class where notions of privilege,

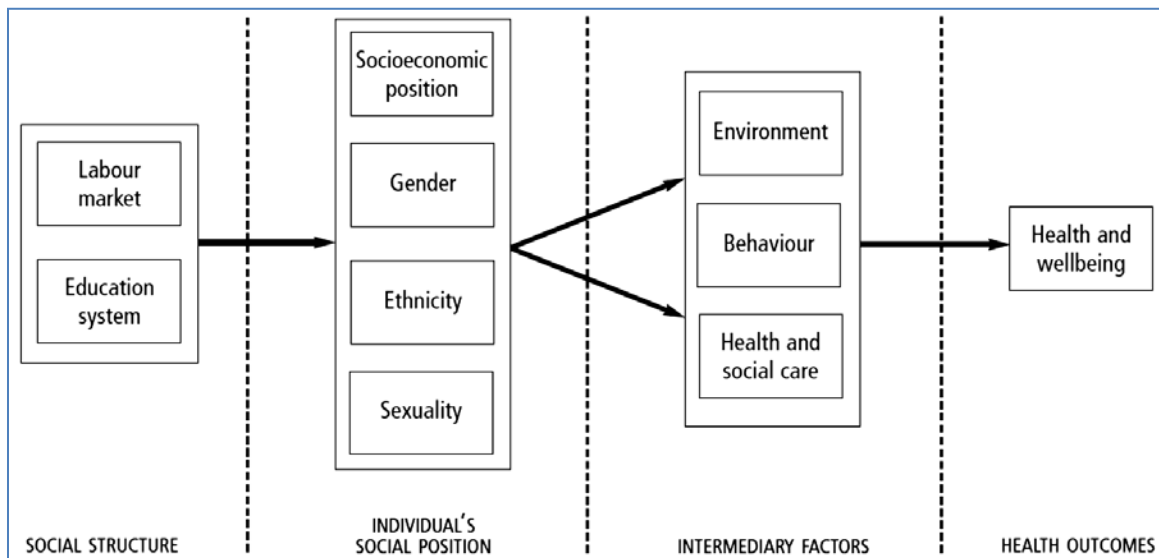
power and lifestyle are emphasised (Formosa and Higgs, 2014). It is an economic and sociological measure that often combines education, income and occupation (Mackenbach *et al.*, 2008). Oakes and Rossi (2003) assert that socio-economic status should also reflect the extent of people's access to collectively desired resources or opportunities such as material goods, power and control, money, social networks, healthcare services, leisure activities and educational facilities, including practical interventions that promote their participation and involvement to promote their own health and wellbeing (Hafford-Letchfield, 2011). Examination of SES often reveals significant inequalities and disparities in access to essential resources or facilities and such differentials can often have a profound effect on people's health. European researchers tend to use the term socio-economic position (SEP) instead of SES (Galobardes *et al.*, 2006) although the two terms are generally synonymous. In relation to ageing, the evidence base for socio-economic inequalities is strongest in the field of health care, compared to other public services. The evidence however, is still limited and piecemeal and largely restricted to individual studies of discrete conditions (EHRC, not dated) but can be found elsewhere at <http://justageing.equalityhumanrights.com/socio-economic-inequalities-in-older-peoples-access-to-and-use-of-public-services/>.

The most commonly used indicators of SES for studying health inequalities are income, occupational class and educational qualifications (Kneesebeck *et al.*, 2003). The income indicator is preferred as a materialistic explanation of health inequalities and may include a household's total cash income measured over a determined calendar period, or averaged period as well as disposable income. Income and wealth are positively correlated, but distinct, as can be seen in the case of an older individual who may have little cash income but substantial wealth through assets such as property ownership. Educational qualifications are closely linked to behavioural influences on health inequalities and occupational status or level of deprivation link to psychological factors in health inequalities (Grundy and Holt, 2001) and has been seen as vitally important for future generations for achieving material security in later life (Burholt and Windle, 2006). Usual or most recent occupation has been long employed as an indicator of SES and predicting variations in health status but may not be useful for older people where there have been groups such as women with less or little labour market experience due to shifting roles in society. Moreover, later-career occupations, unlike education, are more subject to reverse causation problems in which poor health leads to declines in occupational status (Daly *et al.*, 2002) These three indicators are elaborated in some studies to include financial assets and home ownership status. However, in practice, all these indicators are highly correlated and are used interchangeably in many studies.

On other hand, health is the key element for the wellbeing of older people (Bernard, 2000; Khan and Raeside, 2014; Khan and Flynn, 2015). It is a multidimensional concept that is difficult to define and measure precisely. According to WHO (1948), "Health is a state of complete physical, mental and social wellbeing and not merely an absence of diseases or infirmity". In recent years, definitions of health have included more dimensions such as spiritual, emotional, vocational and political. The main physical health indicators (population-level) are mortality rates, survival rates, life expectancy, limiting longstanding illness, self-reported health etc. and mental health indicators may include the existence of known conditions, as well as subjective indicators such as feeling satisfied and happy etc. The flowchart in Figure 1 by Graham and Kelly (2004) illustrates how wider determinants and an individual's social position

might connect to a person's health and wellbeing (Figure 1). An individual's social position may reflect a range of structural inequalities, and perhaps occupy multiple positions (for example, a black African woman in a managerial position or a white British man in a manual occupation). Social position plays a fundamental part in health and the experience of illness, because of its pivotal role in the casual chain by which the social determinants connect and influences health. For example, social positions may be reflected in a person's position in the labour market and their educational attainment which in turn influence the extent to which they may have been exposed to health risk factors such as workplace hazards and poor diet for instance.

Figure 1: Connection of key health determinants.



Source: Graham and Kelly (2004)

HEALTH STATUS OF OLDER PEOPLE IN THE UK

In the UK, there is a persistent gradient in mortality and morbidity or illness according to the levels of socio-economic positions (Tanaka *et al.*, 2011). The Department of Health (2012) reported that approximately 15 million people living in England have some kind of long-term health condition or illness. Long-term conditions are more prevalent among older people (58 per cent of people over 60 compared to 14 per cent under 40) and in more deprived groups (people in the poorest social class have a 60 percent higher prevalence than those in the richest social class and 30 percent more severity of diseases). Further; these numbers are increasing both for the existence of individual conditions, and in the number of people living with multiple and complex long-term conditions. Advanced age remains the most important risk factor for increased disability and dependency and women experience more years with disability than men. As with illness and disease, people with lower SES are more likely to experience disability and dependency at an earlier age than those with higher economic status making capability and independency socially patterned (MRC, CFAS, 2000). Illness may also be more severe even in conditions where prevalence is lower – for example, those who have experienced a stroke. This

latter group is also found to have less access to evidence based support services when from lower SES (McFadden *et al.*, 2009). Analysis of the General Household Survey data has shown that those from unskilled occupations (52 percent) suffer from long-term conditions more than groups from professional occupations (33 percent). Horizontal equity in health care use is an area that remains relatively unexamined in the literature on older people. Allin *et al.* (2006) for example found that individuals on lower incomes are significantly less likely to consult a medical professional despite having greater need and that preventative and specialist care particularly tends to favour the better off. The World Alzheimer Report (2014) suggested that a decline in age specific prevalence is theoretically possible if driven by changes linked to increased prosperity and education which enables people to enter old age with better developed health brains and by targeting problems associated with the behaviours of those older people from lower SES.

Experiences of discrimination and prejudice can undermine mental health and wellbeing, for particular groups such as being an older woman, from black and minority backgrounds, or from Lesbian, Gay, Bisexual or Transgender communities indirectly through the experience of poverty, deprivation, exclusion and inequality. Linking ethnicity and poverty in studies using SES has shown that factors such as having a mixed support network; being in the radar of local health and social care service and health and care providers taking account of the impact of culture and migration and diverse life trajectories on what constitutes health and well-being for ageing minority populations is significant (Maynard *et al.*, 2008; Hafford-Letchfield, 2013)

Co-morbidity or multi-morbidity is a key concern in old age. It is a major health concern and is related to SES too. Statistics shows that it has been increased significantly over the years. The number of people with three or more long-term conditions is predicted to rise from 1.9 million in 2008 to 2.9 million in 2018. The ageing population and increased prevalence of long-term conditions or illness have a significant impact on health and social care and may require £5 billion additional expenditure by 2018 (Barnett *et al.*, 2012). Particular groups are at risk, say for example, more than 70 per cent of people aged over 70, and 55 per cent of people aged over 60 are deaf or hard of hearing. As the population ages the prevalence of hearing loss will grow; by 2031 there are predicted to be 14.5 million people with hearing loss (Action on hearing loss, 2012). Dementia is becoming a critically important issue particularly for older women in the UK, in terms of both the high personal and social costs related to the disease, and the wider impact on other parts of the health and care system. It is estimated that there are more than 570,000 people with dementia in England, and over the next 30 years that is expected to more than double to 1.4 million (Snell *et al.*, 2011). Physical health problems significantly increase the risk of poor mental health, and vice versa. Around 30 per cent of all people with a long-term physical health condition also have a mental health problem, most commonly depression/anxiety (Department of Health, 2012). Substance abuse, particularly of alcohol and prescription drugs, among adults 60 and older is one of the fastest growing health problems. Problematic substance use for example is hitherto and increasingly recognised factor impacting on older people and interacting with a range of health conditions and use of health resources (Center for Substance Abuse Treatment (1998).

Funding health and care in later life has a disproportionate impact on the quality of life experienced by those from a lower SES. A notable change in the retreat of government, greater promotion of individualization within care provision whilst at the same time, reducing eligibility

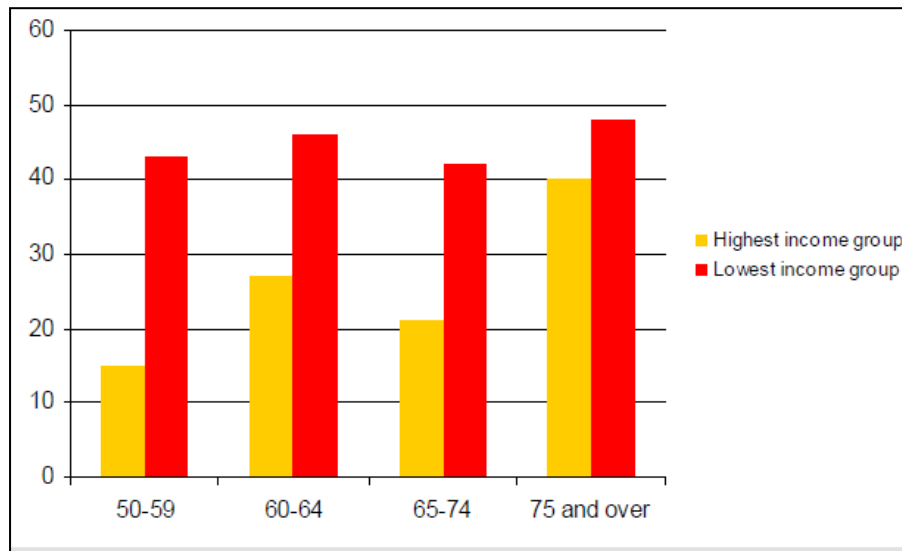
for services, has had a disproportionate impact on older people with lower SES (Hafford-Letchfield, 2013). Furthermore there is little research that integrates class, gender and ethnicity perspectives to provide a more realistic evaluation of the complexities of caring and to evaluate differentials in both quality and outcomes of care (Victor, 2013; Khan *et al.* (2013). Reform to funding of long term care is under pressure from both the contemporary motif of austerity and the ‘demographic’ imperative and has implications for the shifting of risk to those who may not be in a position to engage with it where there are less financial, educational or other resources to cope with these new responsibilities and roles (Hafford-Letchfield, 2013. For example within rural areas, allocations for commissioning health has failed to recognise the implications for those older people experiencing a combination of isolation, poverty and increased costs where services are being rationalized (Burtholt and Windle, 2006)..

CORRELATES OF SES INDICATORS AND HEALTH

Following the overarching themes raised earlier, this section discusses the key SES indicators separately and their correlates with health inequalities among the older ageing population in the UK. In particular, how the inequalities in health of older adults in the UK is associated with differentials in income and wealth, education, occupation and material deprivation are discussed respectively.

A person’s income level is one of the main indicators of their SES and has a significant association with their health. Lower economic status prevents people from actively participating in social events and can make them feel less worthy or of a lower status in the society compared to those that are better-off economically (Marmot, 2004). People with a lower SES generally experience poor health because a low income prevent them from purchasing quality goods and services, and force them with unhealthy cheaper options. The Great Britain General Household Survey 2001 shows that for the people aged 50 and over, there is a significant inequality in reporting long standing illness between the top and bottom quintiles of equivalent household income. People in the highest income group experienced a lower percentage of reporting a long-term illness compared to those in the lowest income group for all age groups in the UK in 2001/02 (Figure 2). These inequalities were steepest among those aged 50-59 and narrowest among those aged 75 and over.

Figure 2: Percentage of people aged 50 and over reporting a limiting long-term illness in the top and bottom quintiles of equivalent gross household income, 2001/02.



Source: Evandrou (2005)

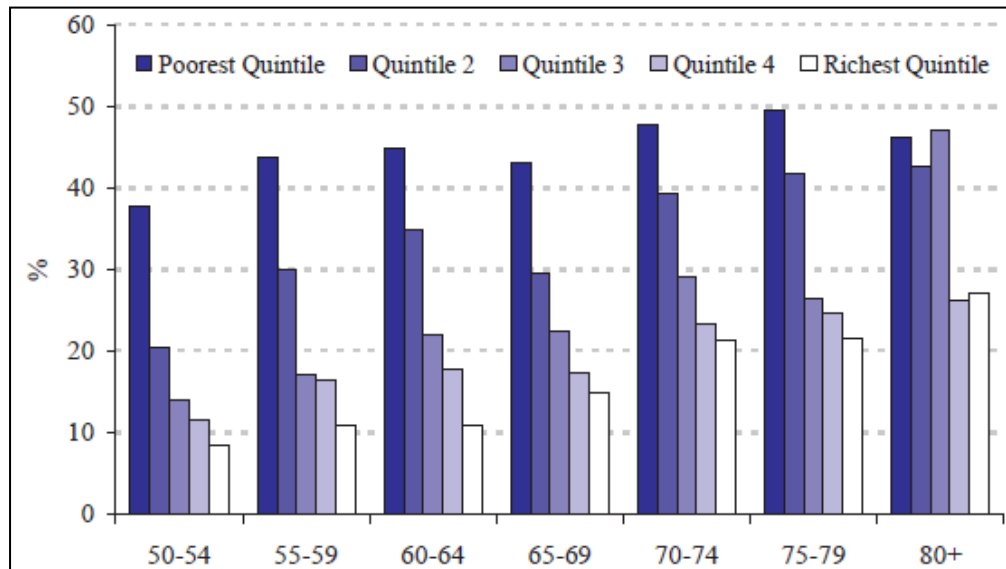
This relationship can work in the reverse direction particularly for older people, as they are more vulnerable to poor health compared to the people in other age groups. Poor health of older people may be related to lower earning capacity. As income is strongly associated with occupation, measuring the socio-economic status of older people through their income is problematic because very few people in the UK continue working after the age of 65. Moreover, collecting comprehensive and accurate income data of older people is difficult because it requires a large number of sensitive questions to identify the different sources of income. These sources could include benefits, pensions, and financial assistance for example, that people may not be willing to disclose and so provoking a low response rate (*Evandrou, 2005*).

Wealth is a better indicator of measures for the economic status of older people than income as it includes the stock of assets that can be used to live on as necessary (*Marmot, 2004*). Wealth represents the accumulated assets throughout life and the distribution of wealth among people is more unequal than other indicators of SES, and therefore, has a significant gradient in people's health choices (*Shaw et al., 2005*). Through analysing the ongoing ELSA data, *Tanaka et al. (2011)* reported that lower financial wealth is significantly associated with higher prevalence and incidence of diabetes among older people.

Income and wealth status facilitate access to health inputs such as higher quality diet and access to medical services, while better health improves a person's earning capacity leading to a strong association between people's economic status and their health. Figure 3 illustrates that health inequalities by wealth quintiles are apparent in all groups aged 50 years and over. For example, taking individuals in the age group 60-64, almost 45 in every 100 people report poor health in the poorest wealth quintile, whereas almost 10 in every 100 people report poor health in the richest wealth quintile. However, the difference is reduced in the oldest age groups. In order

to tackle these significant income inequalities in health, policies could be devised that ensure a minimum income for all to maintain a healthy standard of living along with the introduction of a progressive tax system (The Marmot Review, 2010).

Figure 3: Percentage of people aged 50 and over reporting fair/poor health by wealth quintiles in the UK.



Source: Marmot (2004)

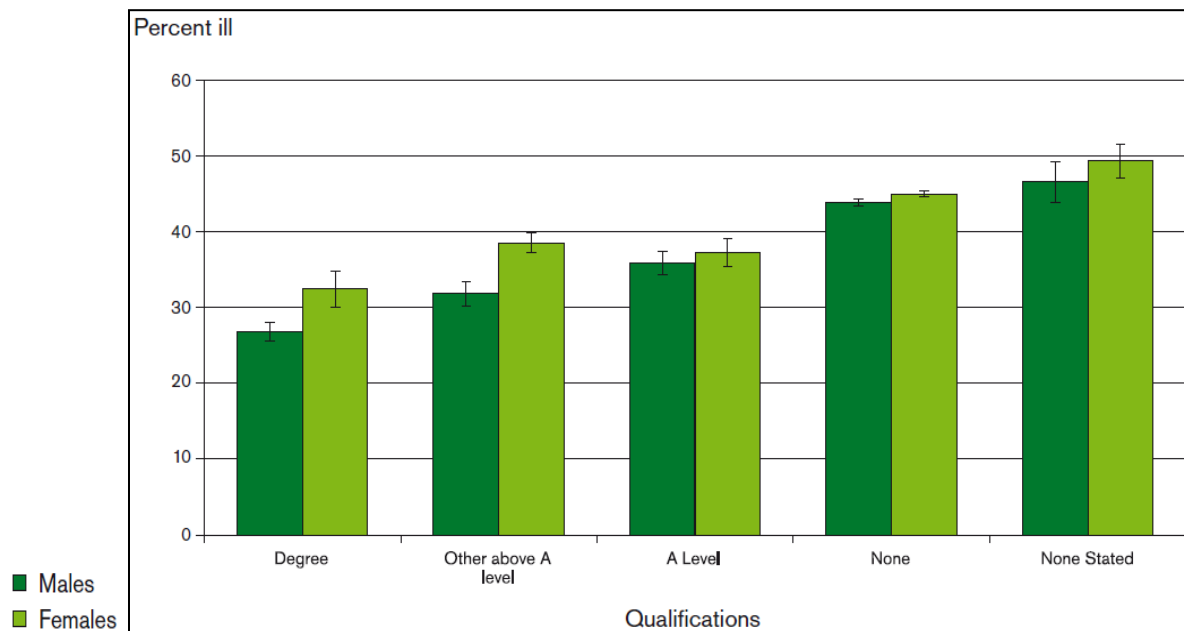
CORRELATES OF SES INDICATORS AND EDUCATION

One of the most important determinants of the SES-health gradient is education which is normally acquired in the early life, and so, the problem of reverse causation is less serious (Grundy and Hot, 2001). Educational attainment has been used as a primary indicator of SES in many studies, and it has played a pivotal role in the analysis of the SES-health gradient particularly for the older people. Elo and Preston (1996) reported that education is focused on two rationales: firstly, it can be applied to both working and non-working people, and secondly, it is more plausible exogenously compared to income and occupation for the study of adult health. Education can affect health through a number of pathways, for instance, lifestyle; behavioural factors; stress management; problem solving ability and maintaining social relations. A number of key reports (Aldridge and Lavender, 2000; Schuller and Watson, 2009,) have made considerable links between education and learning that takes place in later life itself and in linking good health to increased participation and empowerment as well as in making improvements for individuals in health knowledge, promoting their own mental health, and improving cognitive performance and achieving a reduced risk of dementia. As far as the actual quantitative evidence Jenkins (2011) used the English Longitudinal Study of Ageing to consider the health and wellbeing benefits of learning in later life. Studies on participation rates have found that the single most salient feature of participation in learning and education data for later life is that participation continues to be very closely related to social class. A series of indicators all point constantly and unambiguously in the same direction. These are not only the direct measure of SES but all those related factors such as highest level of qualification, income and

occupational status so that the higher SES, the more likely you are to continue to access education in later life. is also more likely to be taken up by those with higher SES (NIACE, 2009). The more educated people are then the less likely they are to smoke, drink, use illegal drugs or have excess weight and the more likely they are to do regular exercise and eat healthier food. The 1970 British Birth Cohort Study reveals that higher educational level is significantly associated with healthier behaviour over the life course. Longitudinal studies in mental health also show that higher cognitive function is associated with lower rates of mental depression and higher intelligence in early life is linked with a declining risk of psychological distress in middle and later life (Gale *et al.*, 2008). Higher educated people are more likely to have the opportunity to utilise new medical technology and have a better understanding of, and access to, knowledge about new diseases compared to people with a lower level of education (Coulter *et al.*, 2008).

The longitudinal study conducted by the Office for National Statistics (ONS) on the UK population aged 50 and over (see Figure) found that the more educational qualifications that a person had attained by 1971 then the lower was the percentage of standardized limiting illnesses being reported in 2001 (Figure 4). Thus, it can be deduced that the level of educational attainment is positively correlated with health status. However, most of the older people today in Europe left school without having educational qualification and consequently, there is an insufficient differentiation between the groups with different educational levels (Grundy and Hot, 2001). This problem is expected to reduce in the coming years in the UK as relatively more educated people move into older age groups. In addition, increased access to lifelong learning through job based learning and apprenticeships, for example, can also play a significant role in reducing such health inequalities (The Marmot Review, 2010) as well as in later life itself (Hafford-Letchfield, 2010).

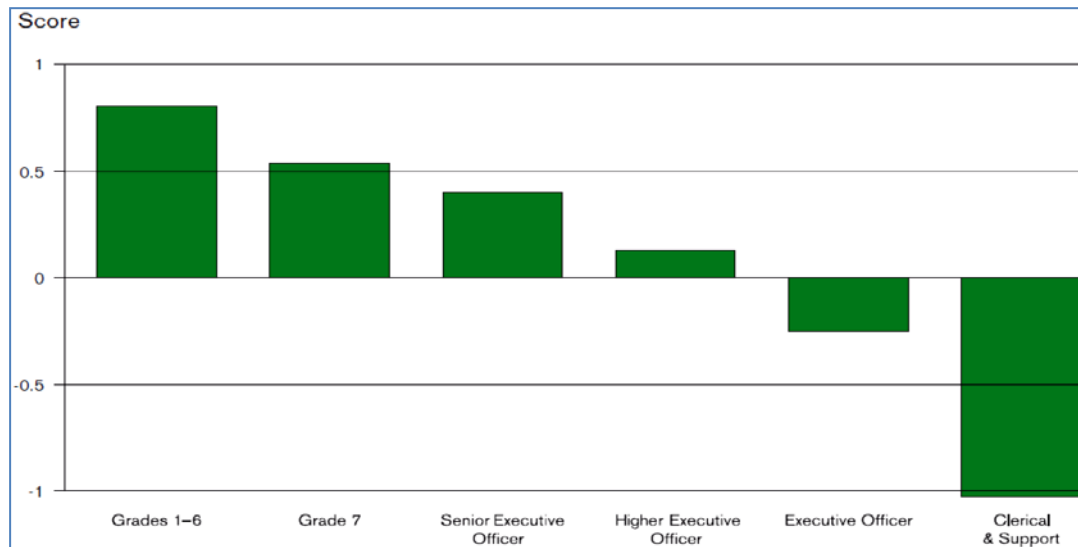
Figure 4: Percentage of standardised limiting illness at age 50 and over in 2001 in the UK by educational qualification attained up to 1971.



Source: ONS Longitudinal Study (2014)

Occupation is one of the most frequently used indicators for measuring socio-economic status in the UK, and it has a significant gradient in health particularly for the working people (Graham and Kelly, 2004). The bulk of research on the association between social class and health has been focused on occupational position or rank. People with lower occupational status are more likely to experience longer or irregular stressful working hours, shift work, and more exposure to physically demanding or dangerous work compared to those who have a higher occupational status. Psychological stress in the workplace, such as lower autonomy, restrictions on participation in decision making and discriminatory practices can also cause ill health (The Marmot Review, 2010). The Whitehall II studies of the UK civil servants, for example, documented that civil servants in lower prestigious jobs were more likely to experience higher rates of mortality from all causes in particular from cardiovascular disorders (Marmot *et al.*, 1978; Marmot *et al.*, 1991). As with education, a person's occupational grade is positively associated with having a sense of control over their health, work and job satisfaction. This can be seen in Figure 5 where civil servants in a lower occupational grade have little sense of control whereas those in a higher grade have a stronger sense of control. This social gradient is linked to increased rates of absence from work place due to physical or mental illness and cardiovascular diseases. A similar gradient is also "reflected in the metabolic syndrome which is a combination of risk factors for diabetic and heart diseases" (The Marmot Review, 2010:73).

Figure 5: The association between civil servants' grade with job control, 1985-88
Civil servants' employment grade.



Source: Marmot et al. (1991), *The Whitehall II study*

However, the use of occupation as an indicator of SES is problematic particularly for older people as most of them do not have currently in employment. In the UK, less than ten per cent of men and five per cent of women aged 65 and over are working in the labour market (Grundy and Hot, 2001). Most of the people in this age group are retired, and social mobility seemed to have declined due to poor health. The UK retirement provision has been changed recently and older people have now choice to stay in labour market as long as they can. Such a legislation allows many financially better off and to lead a healthier life (Leeson and Khan, 2015). In addition, men and women differ substantially both in terms of types of occupation and participation in the labour market (Arber and Ginn, 1993). The occupation of households is centred on a male at the head that is then used to determine the social class for all other members of that household. This means that women are not then accorded social positions (Graham and Kelly, 2004).

Based on the social class, inequalities in the health of older people can be assessed by calculating average life expectancy at age 65. The ONS Longitudinal Study 1982 to 2006 revealed an apparent social gradient in health using this approach. The differentiation in average life expectancy at age 65 showed that there were marked social inequalities in the health of older people between the occupational classes (Table 1). People in higher occupational classes have a higher expectation of life at age 65 compared to those who belong to the lower occupational classes. In 2002-06, people in the highest occupational class (managerial and professional) expected to live almost 20 years more at their 65th birthday (on average, 18.8 years for males and 21.7 years for females), whereas, people in the lowest occupational class (routine work including manual) are expected to live almost 17 years more (on average, 15.3 years for males and 18.5 years for females). The gap between the life expectancy of the highest and lowest occupational groups has widened for both males and females but is steeper for males in the period 1982-86 to

2002-2006. However, the gap between male and female life expectancy at age 65 has narrowed minimally during this same period.

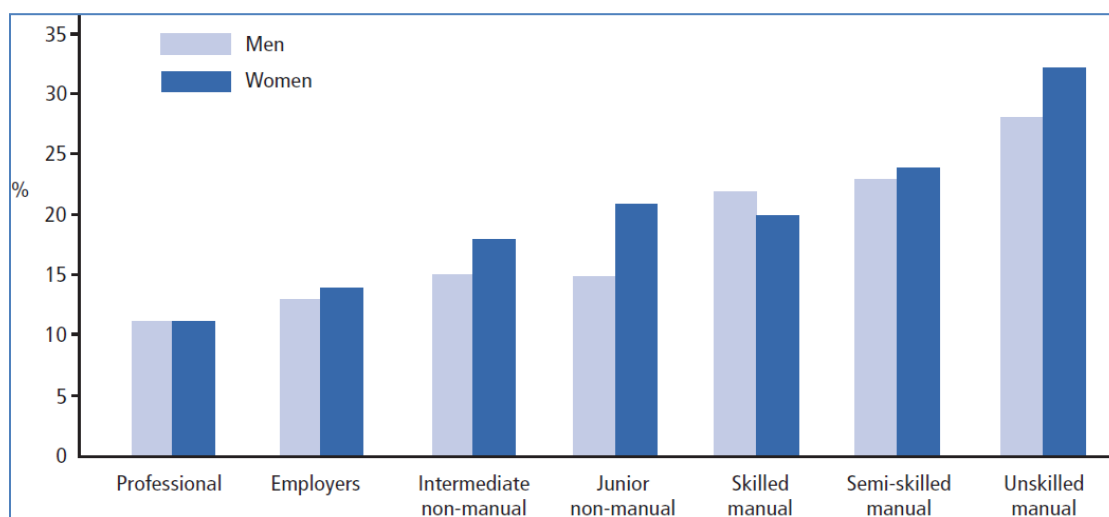
Table 1: Life expectancy at age 65 by social class and gender in England and Wales in 1982-86 & 2002-2006.

Social class	Life expectancy at age 65 in 1982-86		Life expectancy at age 65 in 2002-06	
	Male	Female	Male	Female
Higher managerial & professional	15.2	19.7	18.8	21.7
Lower managerial & professional	15.1	18.9	18.2	21.1
Intermediate	13.9	18.3	17.5	20.5
Small employers & own a/c workers	14.0	18.6	17.5	20.5
Lower supervisory & technical	13.4	18.7	16.4	18.8
Semi-routine	12.9	17.4	15.6	19.4
Routine	12.9	16.7	15.3	18.5
All	13.1	17	16.7	19.5
Range: highest- lowest	2.3	3.0	3.5	3.2

Source: Office of National Statistics (2011)

Graham and Kelly (2004) said that the proportion of people reporting limiting long-standing illness has been steadily increasing from the top occupational group to the bottom group (Figure 6). The experience of limiting long-standing illness has been almost three times higher for people in the unskilled manual group compared to those in the professional group. The higher percentage of women in the major occupational groups reporting such illness may be due to their increased vulnerability to poorer health over the life course.

Figure 6: Percentage of people reporting limiting long-standing illness by occupational class
(Based on occupation of household reference person).



Source: Graham and Kelly (2004)

Comprehensive policies are essential in order to reduce health inequalities caused by occupational class. For example, ensuring a good workplace environment for all could help to reduce physical hazards; flexible employment rules could reduce mental stress; proper training could improve the sense of control; better quality of work and primary health care services available in the workplace could improve the overall health status of all employees.

Deprivation is defined as the inability to participate in usual societal activities due to lack of material resources (Townsend, 1979). It is strongly associated with a person's educational level along with income and occupational class and even more so when the lower levels of these three indicators are combined. Identifying deprivation is one of the aims of socio-economic classifications. People of a lower socio-economic status are generally the most deprived group and those with a higher SES are generally the less deprived group. The association between deprivation and health for older people depends on psychological factors such as empowerment plus relative social status and social integration as well as on the direct links with the ownership of particular resources such as central heating, use of a car and healthcare services (Grundy and Hot, 2001). The Townsends' Checklist is a popular method for measuring deprivation that focuses on resources that might commonly be regarded as essential.

Deprivation is also measured on the basis of ecological data. Living in a deprived area, whether rural or urban, has direct effects on the physical and mental health status of people living in those areas (Sloggett and Joshi, 1998). For example, in 2005-06 male life expectancy in one of the poorest wards in Haringey in London was 72.5 years whereas in one of the wealthiest wards it was 81.5 years (Tottenham Green Profile, 2012). Area classification can often give indicators about the socio-economic status of people living in those areas. The social characteristics of neighbourhoods can be assessed by the extent of mutual support, for instance

and by feelings of trust, numbers taking part in social works and also by the participation rate in crime and vandalism. These all have a significant influence on health (Bone *et al.*, 1992).

Substantial inequalities in mortality and morbidity persist across different regions across England (The Marmot Review, 2010). According to ONS (2009), people living in the richest neighbourhoods expected to live on average almost nine more years than those living in the poorest neighbourhoods. The gap is steeper in the case of disability free life expectancy free. People living in the least deprived neighbourhoods expected to experience 17 more years of disability free life on average, compared to people living in the most deprived neighbourhoods. This indicates that those in the most deprived neighbourhoods not only live for a shorter times but also experience more disability in that shorter life than those living in the least deprived neighbourhoods. Initiatives targeting the most deprived regions, such as redistribution of wealth; healthcare and educational facilities; improved living environment and food quality and reduction in fuel poverty can all minimise such inequalities in health.

CONCLUSIONS AND RECOMMENDATIONS

This study has re-examined the gradients of key socio-economic indicators in the health of older people in the UK by critically analysing selected important published resources. We initially examined the causality of socio-economic status (SES) and health and went on to explore how the gradients in SES determinants are connected with people's lives and resultant inequalities in health. Unlike meta-analysis, this is a valid way to draw robust conclusions about key findings in the relationship between SES and individual health outcomes. The evidence from the main discussion reveals that older people with lower SES are clearly more exposed to risk factors in health compared to those who are of a higher SES and that this is a complex picture. Consequently, those at a lower SES are more likely to suffer health problems such as long-standing illness, disabilities, and have a shorter life expectancy compared to their higher SES counterparts.

All the commonly used indicators have some limitations in determining the exact SES of older people for studying health inequalities due to factors such as less participation in the labour market for example. Though occupation is most frequently used SES determinants in the UK, but education remains the single most important determinant of SES for health inequalities in later life. However, education or occupational class allied with a material deprivation indicator offers the best pair of SES determinants in studying health inequalities of older people (Grundy and Hot, 2001). Besides, like the traditional SES indicators, classification of living area also tells the individual's SES that have significant effect on health inequalities. In particular, people who live in the most deprived neighbourhoods experience more problems with disability or illness even with their shorter life compared to those of the least deprived neighbourhoods. Comprehensive policies targeting people in the lower SES group could help reduce socio-economic inequalities in health in the UK.

Implications of the review for health policy and practice and for future research

SES plays important role in reducing health inequality in the UK. However despite growing evidence of the need to collect routine and comprehensive SES measures, there remains little agreement on which SES measures should be gathered and how this can be achieved through a lifecourse approach particularly in relation to those which particularly affect health outcomes such as occupation, education and household income. Moreover, researchers have shown that these measures are not interchangeable and that the impact of any particular SES measure on health varies across social groups, gender and age. The fact that various measures of SES may summarize different components of overall health risk suggests that a systematic evaluation of the explanatory power of various SES measures is required before an effective set of optimal indicators can be created. This paper contributes to this examination by evaluating the relationship between a set of SES measures, available from both administrative and survey data sources and mortality in relation to their usefulness to examine the impact on health of older people in the UK. Our analysis examines the potential predictive power of selected SES measures and confirms previous research on the links between SES measures and health in later life. We suggest that the economic components of SES should be a standard feature of a nationally agreed measurement system for monitoring links between SES and health and between SES.

Some of the evidence in this paper supports the claim that health care use is also inequitable and that equity of access, use and outcomes in service use is another area for further enquiry using SES indicators. Those involved in policy and provision of health care will need to pay more attention to capture data on the access and pattern of use of health and related services used by older people as well as to the existence of health inequalities in order to formulate strategies and interventions to address these.

Successive UK governments frequently cite the ‘crisis’ of an increasingly ageing population on our society and the implications of subsequent health and support costs. However, as some of the findings from this paper has suggested, whilst the ageing experience can be an individual one, an older persons health and life chances are affected by a complex range of factors involving not only biological, medical and psychosocial, but there exists a wealth of potential observational and epidemiological data which will enable policy makers to understand how successful ageing and wellbeing in later life is strongly influenced through a lifecourse approach. There is a worrying lack of evidence alongside these about what interventions might be effective in reducing inequalities but also to support continual adjustments that individuals are going to have to make to their health and quality of life through changing circumstances amongst those from lower SES. Gaining further evidence in a coherent and continuous way will be essential to develop, justify and evaluate more effective interventions. As we have seen in this paper, differential access to resources may also be a determinant but in itself also subject to a complex interacting network of factors that need to be understood in sufficient detail so as to be made the target of policy and practice interventions associated with improving the health and wellbeing of older all older people in the UK. Furthermore, interventions should ideally be assessed for their efficacy and cost effectiveness with the same rigour as is used in the scientific research into health issues impacting on older people. Having baseline data to assess and measure progress

may go a long way to avoid such ‘crises’ as well as providing a moral imperative to promote a better more healthier ageing population.

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